

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) Laser system ~~having a repetition rate greater than 50 kHz~~ according to the principle of the regenerative amplifier, ~~comprising at least~~ comprising:

- an amplifying laser medium,
- a laser resonator having at least one resonator mirror and at least one modulator, and
- a pump source for pumping the laser medium,

wherein the laser resonator is designed to operate with a repetition rate of greater than 50kHz and has a pulse stretcher, inside a cavity of the resonator, as a specially designed component, the pulse stretcher having at least one of a structure- or material-related dispersive effect, the pulse stretcher having a minimum 3rd order dispersion with a maximum 2nd order dispersion.

2. (Previously Presented) Laser system according to Claim 1, wherein the pulse stretcher has a block of highly dispersive material.

3. (Previously Presented) Laser system according to Claim 2, wherein multiple reflections takes place within the block by reflections at interfaces.

4. (Previously Presented) Laser system according to Claim 1, wherein the pulse stretcher has a Gires-Tournois interferometer or a dispersive layer structure.

5. (Previously Presented) Laser system according to Claim 4, wherein the pulse stretcher has at least two reflecting surfaces, the surfaces being arranged in such a way that the surfaces are oriented

- relative to one another and
- at an opening angle

and the laser beam is reflected at least twice at at least one of the surfaces.

6. (Previously Presented) Laser system according to Claim 1, wherein the laser medium has an inversion life time greater than 1 ms.

7. (Previously Presented) Laser system according to Claim 1, wherein a femtosecond oscillator for inputting seed pulses, the femtosecond oscillator being formed and arranged in such a way that the seed pulses are femtosecond pulses or picosecond pulses on input into the laser resonator.

8. (Previously Presented) Laser system according to Claim 1, wherein an electro-optical switching element as modulator.

9. (Previously Presented) Laser system according to Claim 1, wherein a pulse compressor is outside the laser resonator.

10. (Previously Presented) Laser system according to Claim 9, wherein the pulse compressor has a dispersive grating having less than 1700 lines/mm.

11. (Previously Presented) Laser system according to Claim 1, wherein the pump source is a laser diode.

12. (Previously Presented) Laser system according to Claim 2, wherein the highly dispersive material is at least one of a SF57 glass, SF10 glass or BK7 glass.

13. (Previously Presented) Laser system according to Claim 5, wherein the opening angle is adjustable.

14. (Previously Presented) Laser system according to Claim 6, wherein the laser medium is a Yb:glass or a Yb:crystal.

15. (Previously Presented) Laser system according to Claim 9, wherein the pulse compressor has a dispersive grating having less than 1200 lines/mm.

16. (Previously Presented) Laser system according to Claim 4, wherein the dispersive layer structure is used as a folding mirror.

17. (Previously Presented) Laser system according to claim 9, wherein a relationship of the pulse compressor outside the laser resonator is according to a Treacy design.